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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,394	04/18/2002	Kai Di Feng	BUR920010121	7864

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EXAMINER	
ROSSOSHEK, YELENA	

ART UNIT	PAPER NUMBER
2825	

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/063,394	FENG, KAI DI	
	Examiner	Art Unit	
	Helen Rossoshek	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *11-18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,19-21 and 24* is/are rejected.

7)☒ Claim(s) *4-10,22 and 23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 April 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the Application 10/063,394 filed 04/18/2002 and amendment filed 01/04/2005.

2. Claims 1-24 remain pending in the Application. Claims 11-18 have been withdrawn from consideration as non-elected claims after Restriction/Election.

Drawings

3. Figures 1A and 1B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because the Receiver 261 on the Figure 2 is not marked in compliance with the Specification (Page 5).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings 1C and 8 are objected to under 37 CFR 1.83(a) because they fail to show all details claimed in the claims 1 and 19; either Figure 1C or 8 have to shoe all elements from Claims 1 and 19, such as 1) adjustable delay circuitry, 2) phase monitor, 3) controller as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary

to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities: the description of the Figure 2 on the Pages 6, 8 has a contradictions in term of matching the numbers and titles of the elements on the Figure 2 with its description in the Specification. For example: element 230 is called by "configuration word interface" in one place or by "serial communication port" in the other place or "configuration port" in the third place etc.

Appropriate correction is required.

Claim Objections

7. Claim1, 5 and 6 are objected to because of the following informalities: the limitation having the phrase "adapted to" is not a positive limitation and only requires the ability to so perform.

8. Claim is objected to because of the following informalities:

claim 1 line 5 after "circuits" insert --;--

claim 1 line 6 delete ";"

claim 21 line 2 after "circuits" insert --.--

Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3, 19-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al. (US Patent 5,394,490).

With respect to claim 1 Kato et al. teaches an apparatus for maintaining signal integrity between circuits residing on a printed circuit board within a clock signal supply system (abstract) including a phase adjuster 1010 shown on the Fig. 11 to adjust the phase of the clock signal between circuits (col. 11, ll.20-21; col. 12, ll.65-67), the apparatus comprising: adjustable delay circuitry within programmable delay line 1012 shown on the Fig. 11 for generating a clock signal having a predetermined frequency and phase (col. 13, ll.66-67); a phase monitor connected to the circuits within phase comparator 1011 shown on the Fig. 11 connected to the programmable delay line circuitry 1012, the phase monitor to detect phase differences between signals output by the circuits to detect the phase advance or retardation of the clock signals i.e. difference between signals (col. 13, ll.8-10); and controller connected to the delay circuitry and the phase monitor within a delay controller 1013 shown on the Fig. 11 which is connected to the phase comparator 1011 (phase comparator) and the programmable delay line circuitry 1012 (delay circuitry), the controller to adjust the delay circuitry to compensate

for the phase differences by using delay controller 1013 for controlling the delay time of the signals (col. 13, ll.12-14).

With respect to claim 19 Kato et al. teaches a method of coordinating timing signals within circuits on a printed circuit board (abstract; col. 3, ll.19-26), the method comprising: detecting phase differences between signals output by the circuits using a phase monitor within phase comparator 1011 shown on the Fig. 11 connected to the programmable delay line circuitry 1012, the phase monitor to detect phase differences between signals output by the circuits to detect the phase advance or retardation of the clock signals i.e. difference between signals (col. 13, ll.8-10); adjusting delay circuitry within the circuits to compensate for the phase differences using a delay controller 1013 for controlling the delay time of the signals (col. 13, ll.12-14).

With respect to claims 2, 3, 20 and 21 Kato et al. teaches first data lines connecting the circuits to each other by data lines connecting programmable delay line circuitry 1012 with other circuits such as 1004, 1014; and second data lines connecting the controller to the circuits, wherein the second data lines transmit data at slower rate than the first data lines within the lines coupling the delay controller 1013 and programmable delay line circuitry 1012 which adjusts the delay time of the programmable delay line circuitry 1012 according comparison result, such as to advance or retard the signal line (col. 13, ll.12-14); a serial data line connecting the controller to the circuits within a multi-stage selector circuit included into the programmable delay line circuitry 1012 having different circuit or a delay time (col. 13, ll.25028) and used for selecting a signal route and the delay time to adjust the phase of

the clock signal where the delay tome is controlled by the delay controller 1013 to connect with the programmable delay line circuitry 1013 (col. 13, ll.30-33).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. as applied to claim 19 above, and further in view of Ernst et al. (US Patent Publication 2022/0160558).

With respect to claim 24 Kato et al. teaches the limitations from which the claim depends. However Kato et al. lacks the specifics regarding storing delay information. Ernst et al. teaches storing delay information in delay registers within register 7 shown on the Fig. 1 for storing the information about delay obtained from comparator 6 (Paragraph [0042]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used Ernst et al. to teach the specifics subject matter Kato et al. does not teach, because in the test receiver a delay time is determined and set in accordance with desired values of a time position between the data response read from the memory module and the data strobe response signal (Paragraph [0012]).

Allowable Subject Matter

13. Claims 4-10 and 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not teach receiver circuit comprising: a plurality of channels; and a configuration word interface connected to the channels and to the controller, wherein the adjustable delay circuitry comprises at least one adjustable delay device within each of the channels, and wherein the configuration word interface controls the delay device to coordinate a signal timing of the channels as claimed.

14. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helen Rossoshek whose telephone number is 571-272-1905. The examiner can normally be reached on 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner
Helen Rossoshek
AU 2825

A. M. Thompson
Primary Examiner
Technology Center 2800